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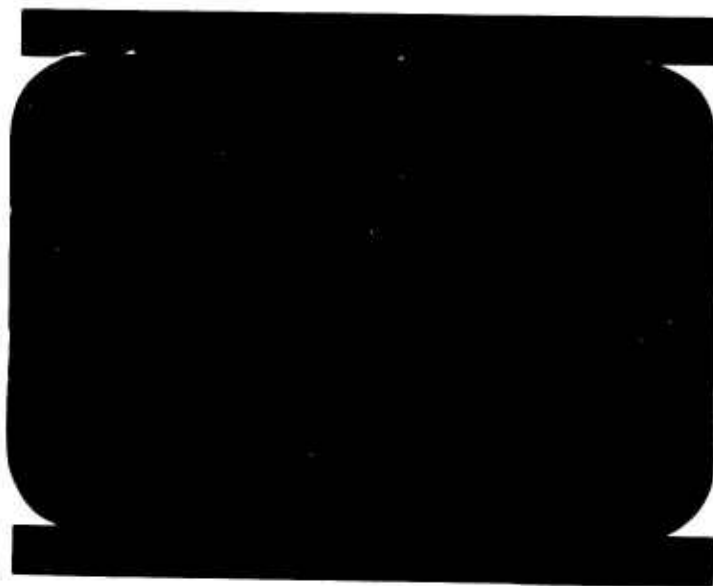
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CONVAIR (ASTRONAUTICS) DIVISION
GENERAL DYNAMICS CORPORATION

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CONVAIR ASTRONAUTICS

CONVAIR DIVISION OF GENERAL DYNAMICS CORPORATION

AE60-0621

ADJUSTMENT AND PRELOAD PROCEDURE

for

INTERSTAGE SEPARATION LATCH

Atlas/Centaur Missile (Model 58)

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SECTION I

INTRODUCTION1.1 Introduction

- 1.1.1 This manual provides adjustment and preload instructions for the Interstage Separation System Latch. The instructions are based on information available at the date of publication and will be revised as additional information becomes available.
- 1.1.2 Personnel concerned with the installation or adjustment of this latch can contribute to the effectiveness of the revised manuals by forwarding comments to the cognizant design group or to Support Publications Convair Astronautics.
- 1.1.3 The Interstage Separation Latch is a mechanical device designed to lock the Centaur missile to the first stage adapter.
- 1.1.4 Four (4) separation latches (27-45402) are attached inside the first stage adapter and are spaced approximately equally about its circumference as shown on the latch installation drawing. (55-45000)

1.2 Use of Procedure

- 1.2.1 This procedure shall be used for the following conditions:
 - (a) During the initial mating of a Centaur missile with an Atlas first stage adapter.
 - (b) When inspecting or replacing a separation latch assembly.

SECTION II
ADJUSTMENT AND PRELOAD

2.1 Adjustment and Preload

2.1.1 The separation latch shall be adjusted in the following manner:

- a. Remove the AN415-1-1 pin and the 27-45414 shear plate (See Fig. 8).
- b. Unlatch the 27-45403 arm by depressing the 27-45411 piston, and rotate the arm to the fully open position (See Fig. 1).
- c. Mate the Centaur tank and the first stage adapter so that the 57-72212 fittings are fully engaged with the 27-45402 latch assemblies (See Fig. 2).
412.112
- d. Clamp together the Centaur tank ring and the first stage adapter ring at station 408.72 at six (6) inch intervals for a peripheral distance of 18 inches on both sides of the centerline of each latch (Model P1200 Knu Vise-clamps or equivalent are suitable tools for this operation). (Fig. 2). Place clamps over separation springs (55-45002) or use .060 spacer between rings under clamps.
- e. Remove the 27-45440 bolt assembly and adjust the 27-45438 slide to its fully retracted position inside the 27-45439 bolt by turning the 27-45405 bolt clockwise (See Fig. 3).
- f. Close the 27-45403 arm such that the 27-45406 hook engages the slot in the 57-72212 fitting, and the 27-45411 piston rides over the lip of the 27-45403 arm locking the arm in the closed position (See Fig. 4).
- g. Replace the 27-45440 bolt assembly and the 27-45402 washer in the 27-45403 arm so that a gap of .180 inches exists between the bottom surface of the bolt head and the top surface of the 27-45403 arm (See Fig. 5). The .180 dimension is most easily achieved by using a .180 inch spacer between the bolt head and the washer. (See Fig. 5).
- h. While maintaining the .180 inch gap between the 27-45439 bolt head and the 27-45402 washer, adjust the 27-45405 bolt counter-clockwise until the 27-45438 slide contacts the 27-45406 hook and a .020 inch gap is obtained between the mating surfaces of the 57-72212 fitting and the 27-45406 hook. To obtain the correct gap use the check gage (See Fig. 5) and insert it thru the 7/8 inch

SECTION II

2.1.1

h. (Continued)

diameter hole in the Adapter skin. The correct gap is achieved when the stop on the check gage rests flat against the 57-72212 fitting and 27-45406 hook starts to contact the .020 inch portion of the check gage. Remove check gage and re-insert it, if the adjustment is correct a slight force will be required to push the stop on the check gage flush against the 57-72212 fitting.

- i. Remove the feeler gage and screw in the 27-45440 bolt assembly until it bottoms out on the 27-45402 washer and the 27-45403 arm (See Fig.6).
- j. Completely fill the wrench recess in the 27-45439 bolt with glyptal cement (CVA material No. 27304) (See Fig.3).
- k. Replace the 27-45414 shear plate and the AN 415-1-1 pin (See Fig. 7).
- l. Remove the clamps from the thrust structure and missile tank rings at station 408.72.

SECTION III

INSPECTION3.1 Inspection

- 3.2 The 27-45402 latch assemblies may be inspected for proper adjustment and preload only if the missile is properly mated with an Atlas in the service tower and when the missile is not in stretch.

CAUTION

Do not actuate any latch assembly unless the missile is properly supported as specified above.

- 3.2.1 In addition to the missile support requirements of paragraph 3.2 above, it will be necessary to clamp together the missile tank ring and the thrust structure ring at station 408.72 if any of the following three conditions exists:

- a. Replacement of a 27-45402 latch assembly.
- b. Mating of a new Centaur missile to an existing Atlas missile
- c. Mating of a new Atlas missile to an existing Centaur missile.

Any of the above conditions will necessitate a latch adjustment as specified in AE60-0621 paragraph 2.1.1 a through l.

- 3.3 To determine if the latch adjustment is correct, and the proper preload exists, the following procedure may be used with the missile supported as specified in paragraph 3.2 above.

- a. Back off the 27-45440 bolt assembly until a .180 inch gap exists between the 27-45439 bolt head and the 27-45402 washer with the washer resting on the 27-45403 arm (See Fig. 5).
- b. Using the check gage determine if a .020 inch gap exists between the 27-45406 hook and the facing surface of the 57-72212 fitting (See Fig. 6).
- c. If step (b) above is satisfactory screw the 27-45440 bolt assembly down until it bottoms out on the 27-45402 washer and the 27-45403 arm.
- d. If step (b) above is unsatisfactory repeat steps (a) through (c) of paragraph 2.1.1 above.

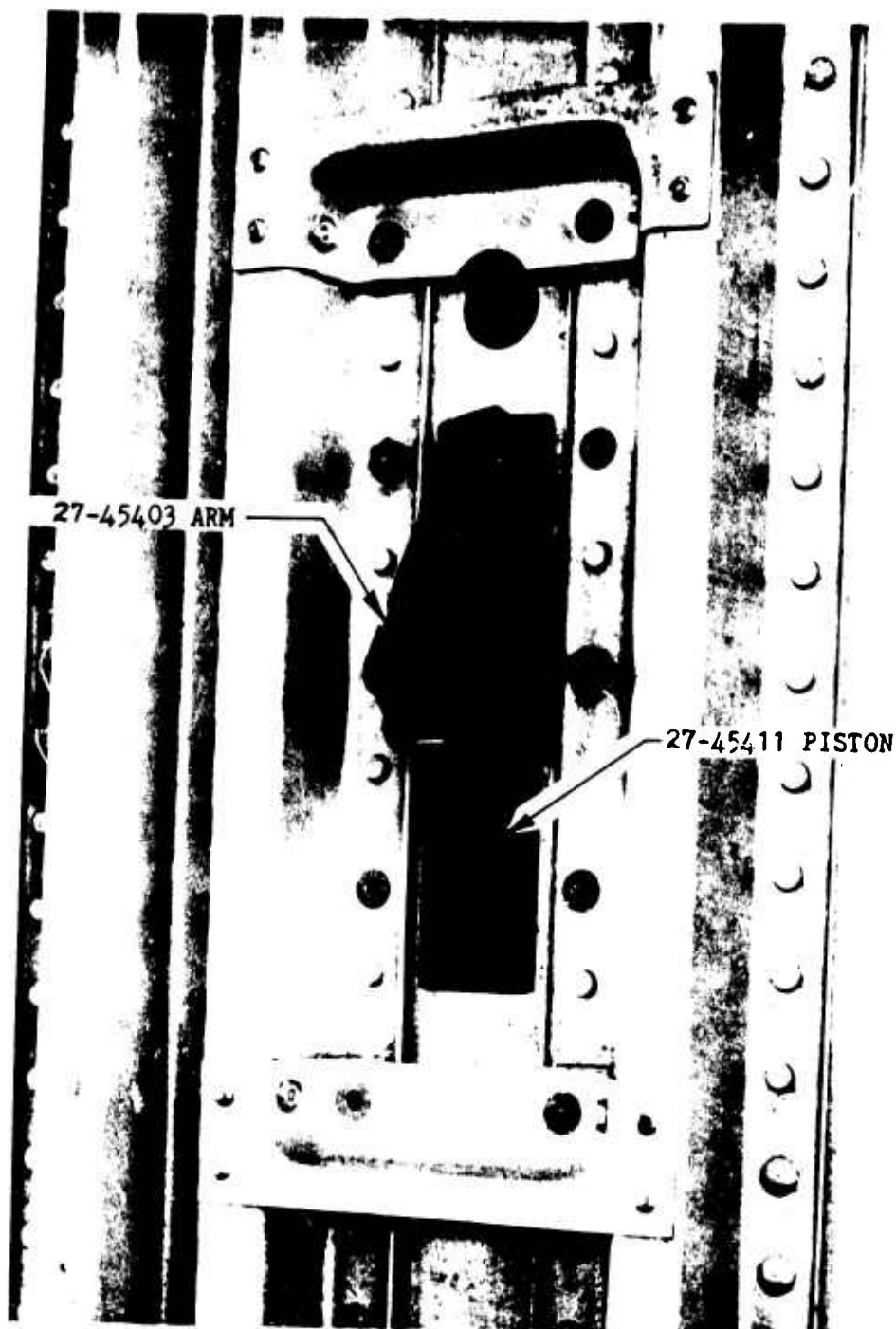
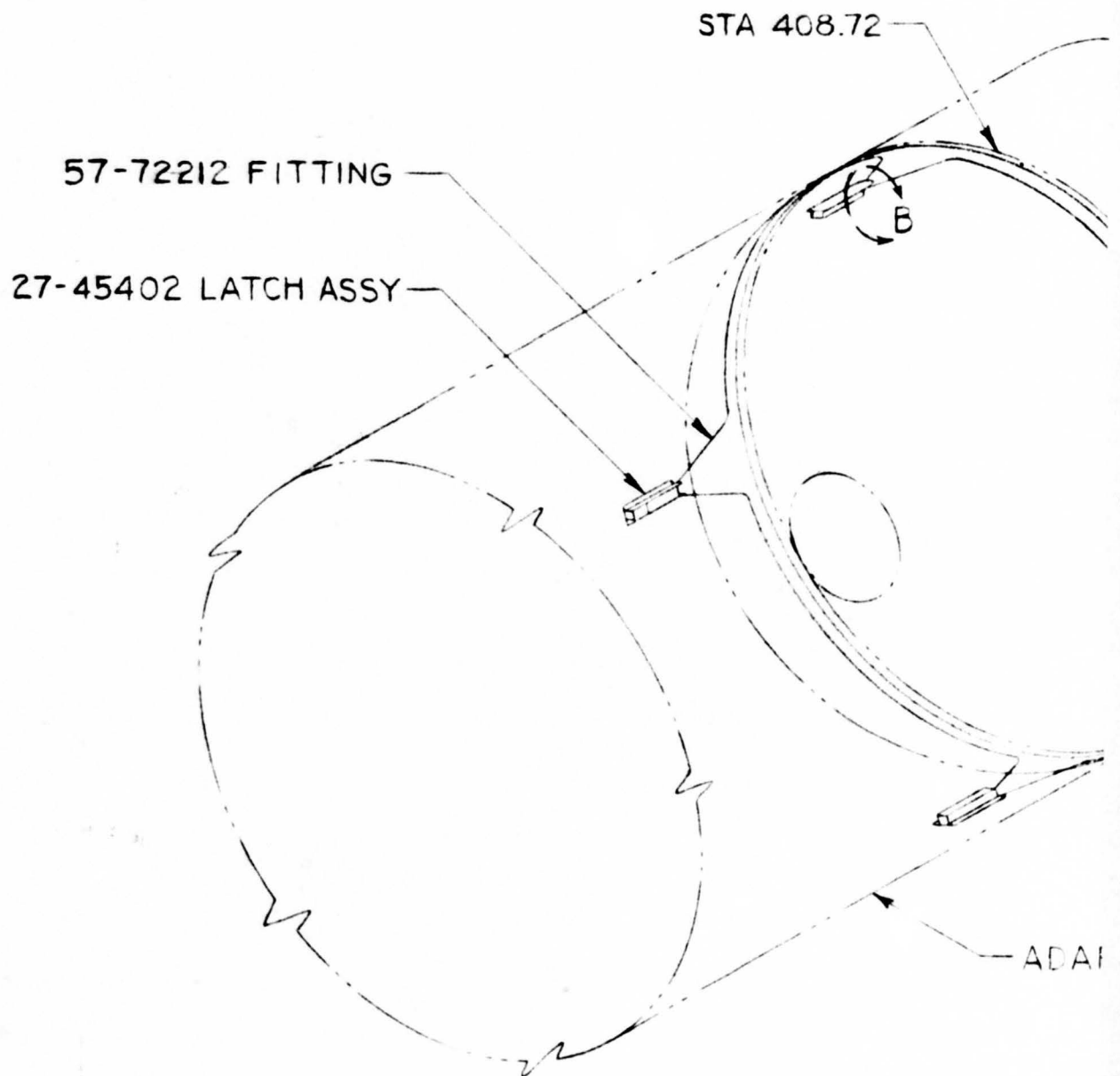
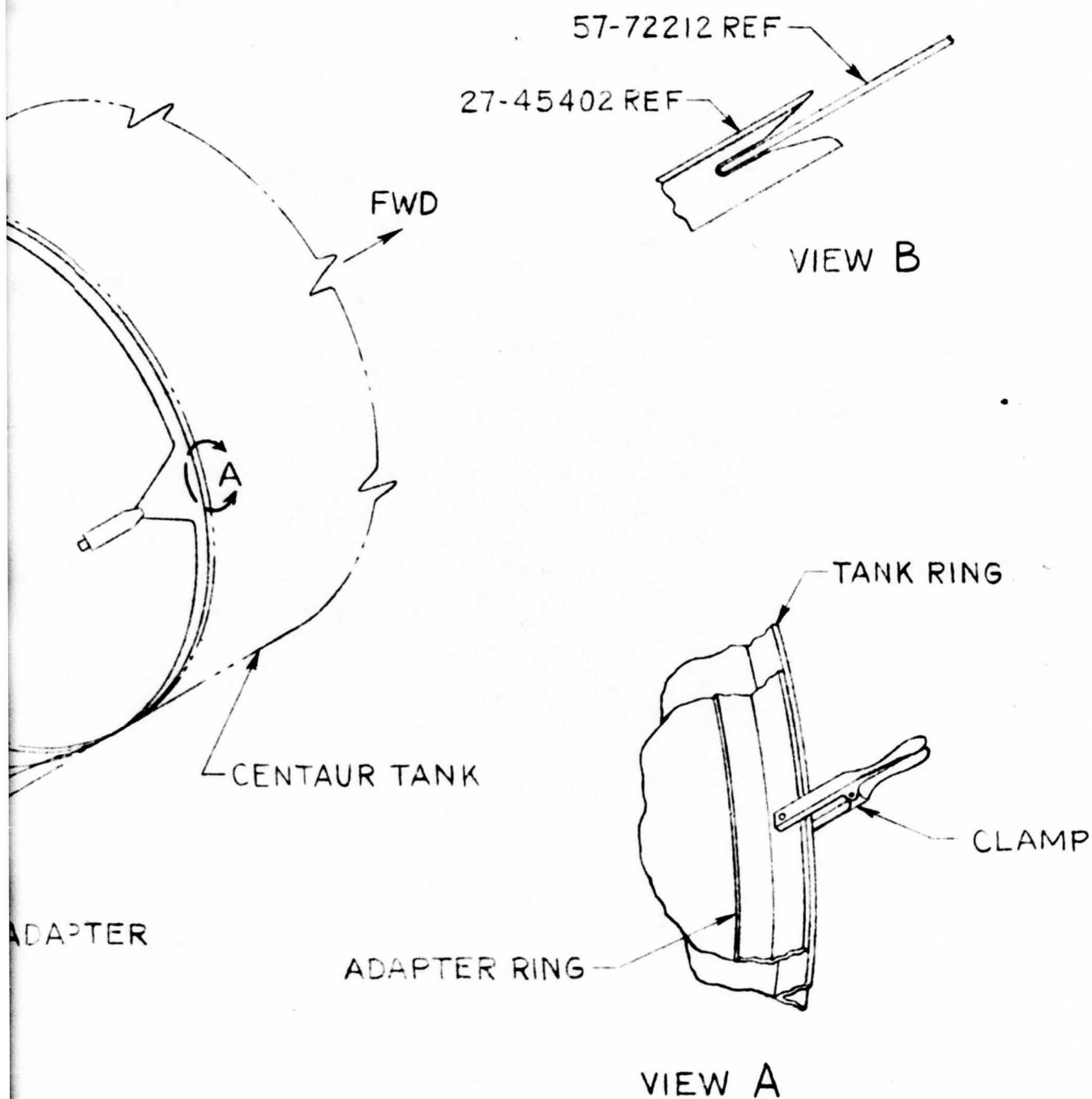


FIGURE 1



FIGL



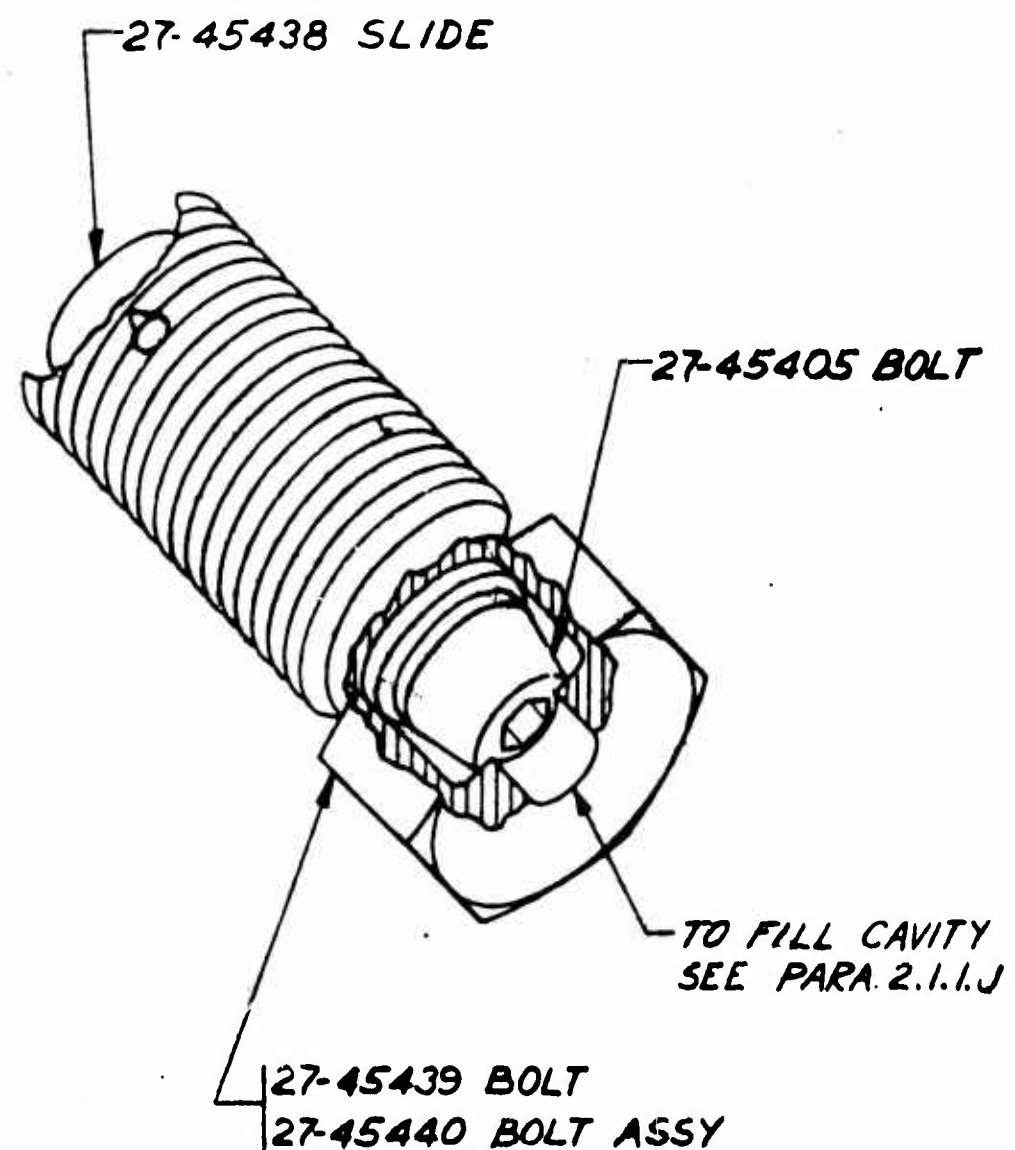


FIGURE 3

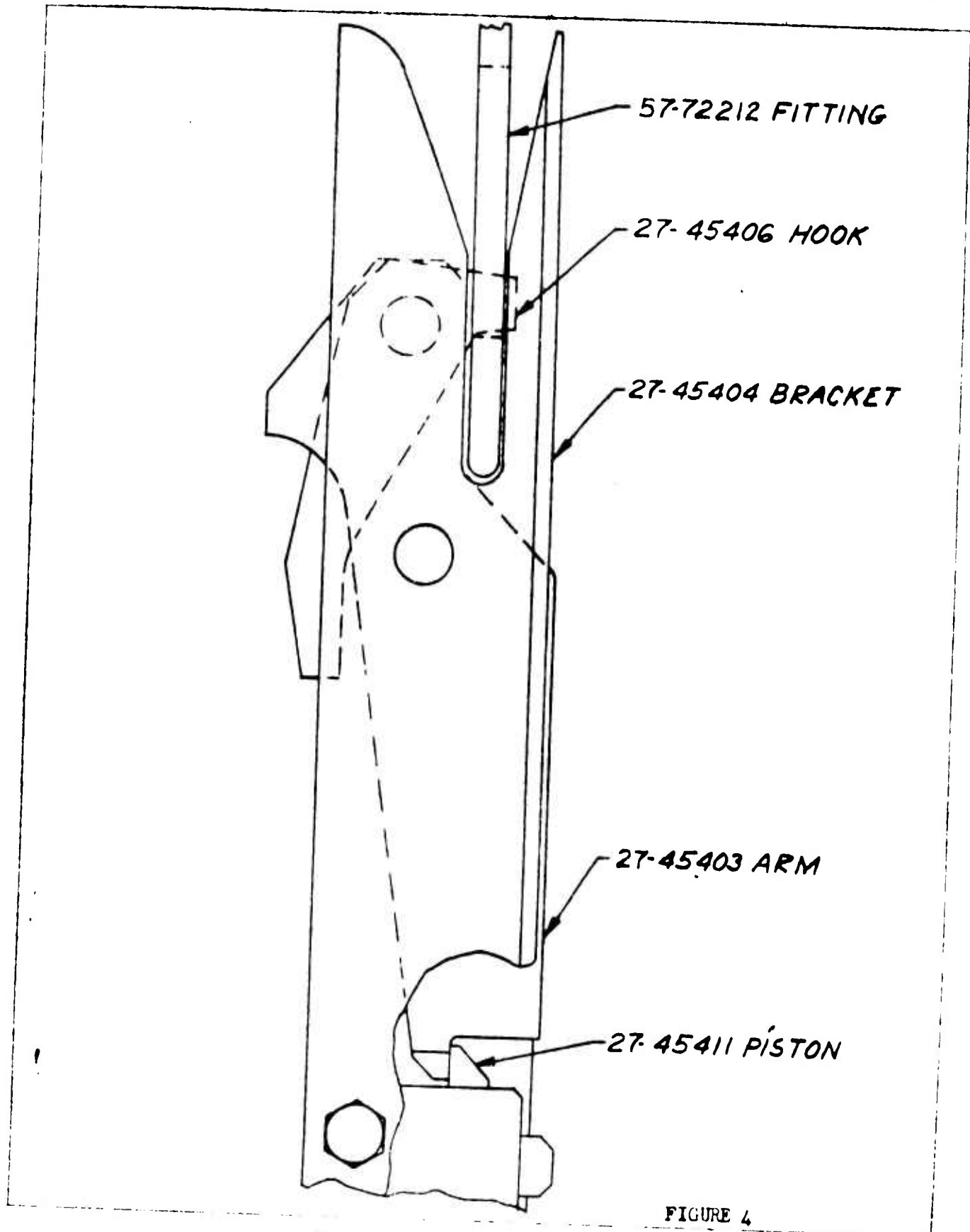


FIGURE 4

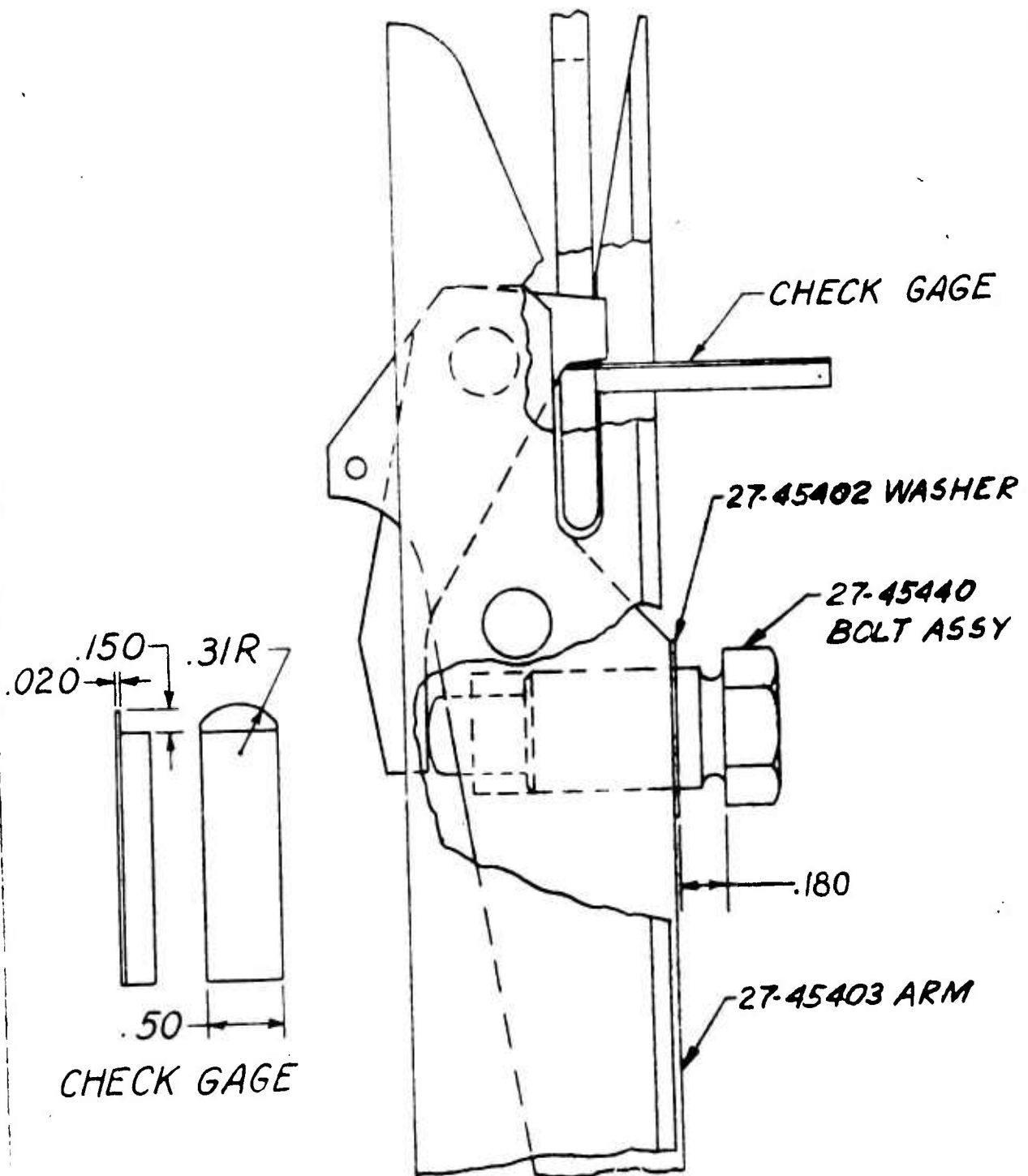


FIGURE 5

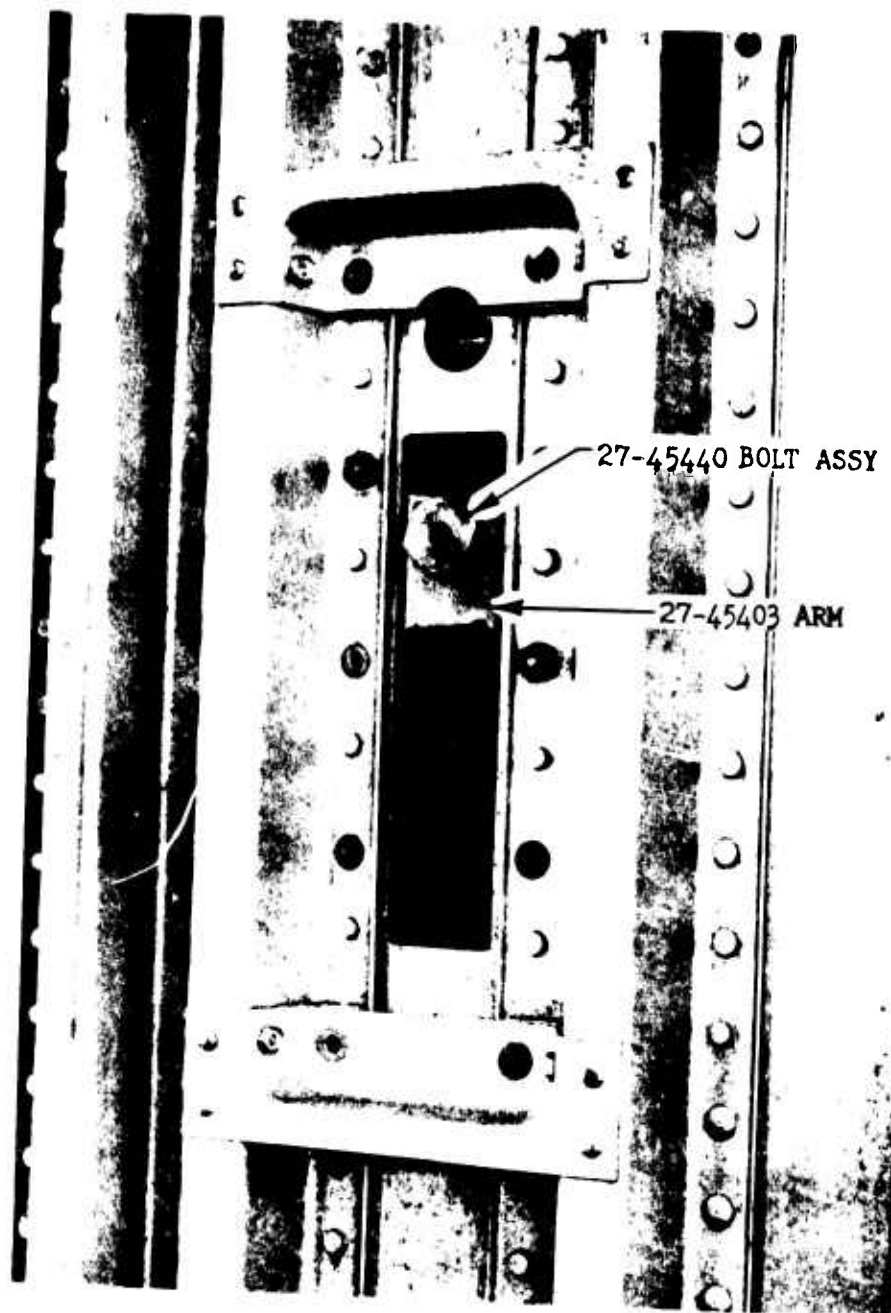


FIGURE 6

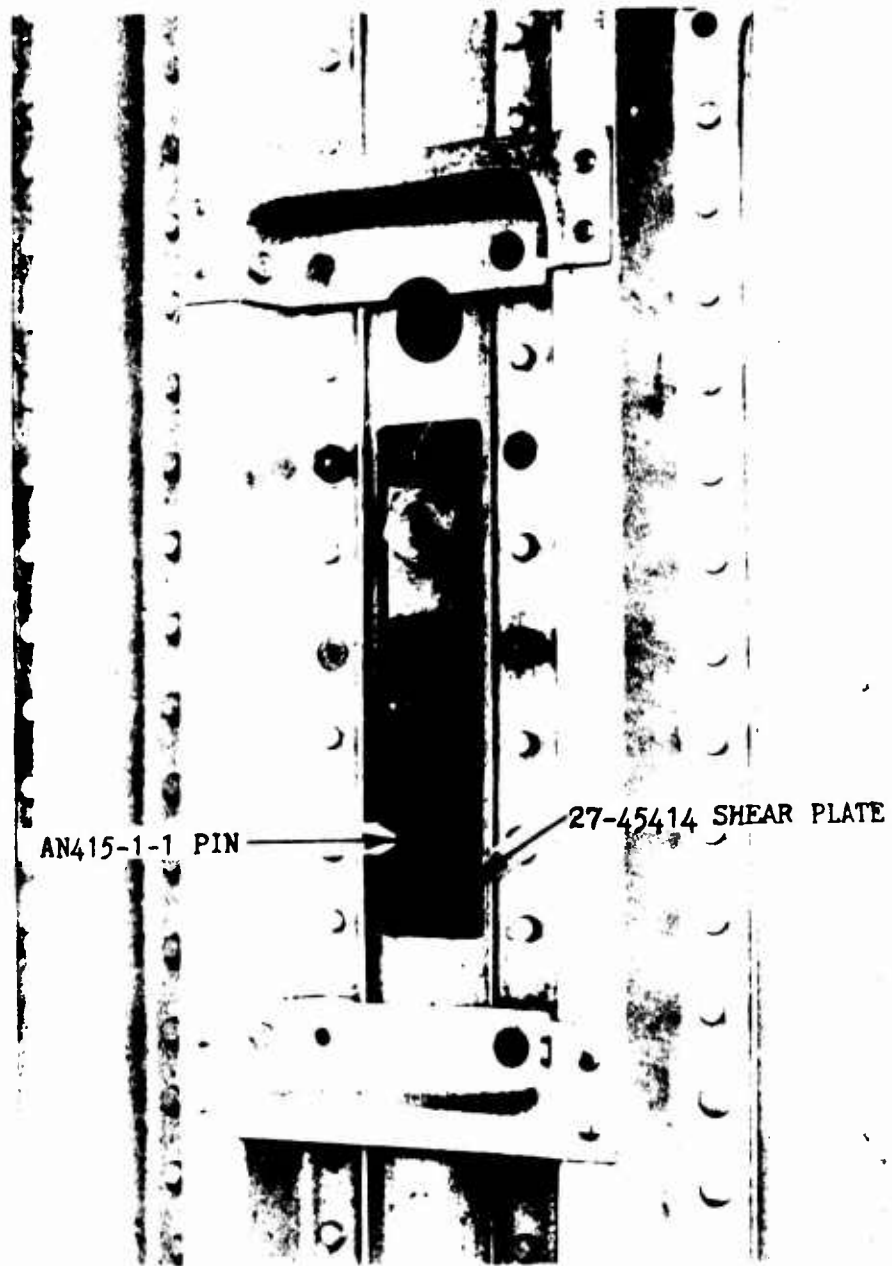


FIGURE 7